# ELECTRICITY on the FARM

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AUGUST, 1939

# NEW 1940 G-E RADIO

## ONE THIRD MORE RADIO FOR 27% LESS MONEY

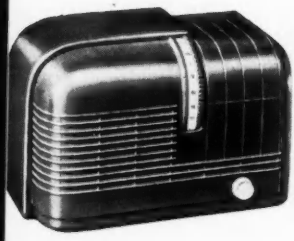
WAY up in value—Way down in price. That's the big news about the new 1940 General Electric Radio.

Just to give you a quick idea of the tremendous plus values that G-E Radio offers, the new 1940 G-E Model H-87 featured here is actually priced 27% lower than the nearest comparable G-E Model of last year. And, by any yardstick, it offers you fully one-third more radio—more new features, more new improvements, more performance, more beauty of cabinet design.

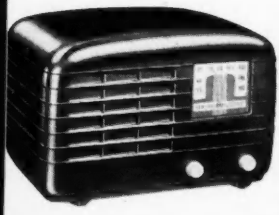
You'll find this same more-for-your-money idea carried through every new 1940 G-E Model—from the lowest priced table set to the most sumptuous radio-phonograph combination.

Stop in soon at your nearest G-E Radio Dealer. See—and hear—how much more for your money G-E Radio offers.

**New 1940 Model H-87** (*Illustrated above at right*)—8 Tubes . . . 3 Bands . . . New 14-inch Dynapower Speaker . . . New Super Beam-a-scope . . . New Sight-angle Visualux Dial . . . 10 watts Output . . . Floodlighted Station Finder . . . New Drift-proof Station Setting . . . New Super-Powered Chassis.



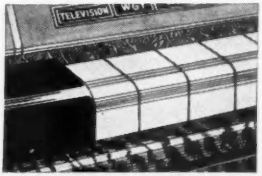
**New 1940 G-E Model H-500**—AC-DC Operation . . . 5 Tubes . . . Superheterodyne . . . Standard Broadcasts and Police Band . . . Dynapower Speaker . . . New Drum-type Dial for Faster Tuning . . . Attached Antenna . . . Smartly Styled Plastic Cabinet.



**New 1940 G-E Model H-600**—AC-DC Operation . . . 6 Tubes . . . Superheterodyne . . . New Feather-touch Tuning . . . New 5-inch Dynapower Speaker . . . Built-in Beam-a-scope . . . Airplane-type Dial . . . Tone Monitor Circuit . . . Standard Broadcasts . . . 550 to 1600 kilocycles . . . Handsome Plastic Cabinet.

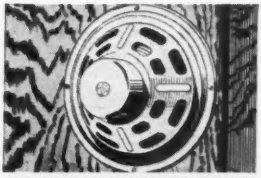
**RURAL ELECTRIFICATION SECTION, SCHENECTADY, N. Y.**

## THE RADIO WITH THE BIG PLUS VALU

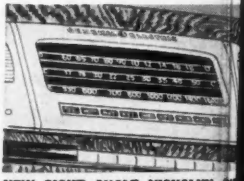



**TELEVISION AUDIO OR PHONOGRAPH KEY.** Supplies "the voice of television" through your radio's loudspeaker when used in conjunction with a television picture receiver.

**NEW SUPER BEAM-A-SCOPE** eli need for aerial and ground wir —reduces local static and obj tionable noises. Assures fin quieter reception. Permits plu ging in your radio like a floor lam



**NEW 14-INCH DYNAPOWER SPEAKER** Another G-E Radio first—developed in G-E "House of Magic" Laboratories. Trouble-free—charged to maximum capacity for long-life performance.



**NEW SIGHT ANGLE VISUALUX** The easiest-to-read dial you ever seen. Kilocycle numbers deep-moulded three-dimensio block numerals—edge lighted maximum visibility from any an

# GENERAL ELECTRIC

# 5 Million Frigidaires have been Built and Sold!

## AND THIS YEAR'S FRIGIDAIRE IS THE GREATEST OF THEM ALL!

**See PROOF of Lower Operating Costs... Faster Ice Freezing... Safer Food Protection... Greater Convenience... Longer Durability... for Farm Homes!**

● Frigidaire is the standard of refrigerator value the world over. And you can see PROOF in this year's Frigidaires! They're handsomer, roomier, sturdier than ever before—with more features, more value, more savings for the farm home. They keep foods safer, fresher, longer—at amazingly less current cost!

See your Frigidaire Dealer's demonstration before buying any other refrigerator. You'll agree that this year's Frigidaire is the greatest of them all!

FRIGIDAIRE DIVISION
General Motors Sales Corporation, Dayton, Ohio

**Compare These Outstanding**
**FRIGIDAIRE FEATURES**
**with Anything Offered by Any Other Make!**

**COMPARE**
**The New Silent Meter-Miser.** Simplest refrigerating mechanism ever built!
*Only Frigidaire has it!*

**COMPARE**
**F-114 Low-Pressure Refrigerant.** Called "the safest refrigerant known to mankind"!
*Only Frigidaire has it!*

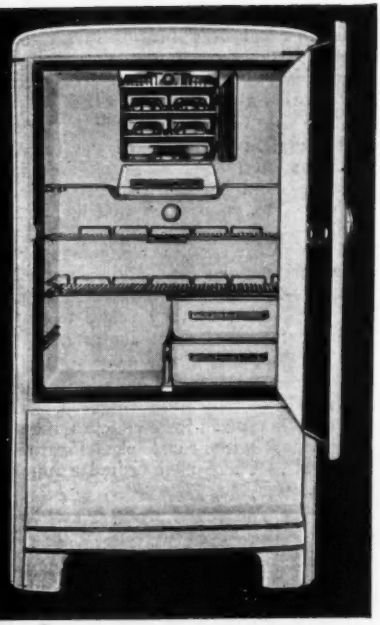
**COMPARE**
**One-Piece All-Steel Cabinet.** One-piece all-steel construction from top to bottom!
*Only Frigidaire has it!*

**COMPARE**
**"Double-Easy" Quickube Trays.** Ice cubes pop out instantly at lift of lever!
*Only Frigidaire has Quickube Trays!*

**COMPARE**
**Multiple-Cold Food Protection.** The right Temperature and Moisture for every kind of food! And only Frigidaire has the "Cold-Wall" for moist-cold storage of *uncovered* foods!

**COMPARE**
**THE MANY OTHER FAMOUS FRIGIDAIRE PLUS-VALUE FEATURES**

***Built and Backed by General Motors***



Frigidaire invites you to visit the
**GENERAL MOTORS EXHIBITS**
at the New York World's Fair and The Golden Gate International Exposition, San Francisco.

**FRIGIDAIRE IS MADE ONLY BY GENERAL MOTORS**

# *Editor's Chat*

## U.S.D.A.'S PROGRAM OF RURAL ELECTRIFICATION

We have good news.

In the past we have made some critical statements about the failure of the Department of Agriculture to recognize its responsibility to farmers in helping them to make profitable and satisfactory use of electric service and to avoid costly mistakes. The picture has now changed somewhat.

In addition to the activities of county agents and extension specialists in helping to promote lines, better wiring, etc., the Department is now undertaking to foster research projects.

Within the year Miss Lenore E. Sater has been employed by the Bureau of Home Economics to head its Division of Household Equipment. Miss Sater grew up on an Iowa farm. She has had excellent training in electricity as well as home economics. Her experience in electrical equipment factories, in college research and teaching, and in extension work and teacher training, gives her a superior background for her new responsibilities.

In July, 1938, the Bureau of Agricultural Engineering was given a small appropriation by Congress to start research work in rural electrification. Mr. Harry L. Garver, an old timer in rural electrification investigations, was brought from Washington State College to start this program. Mr. Garver has given us this information about the program:

"The first of our objectives is to get as clear and complete a picture of the research work that has been done as is possible in a short time. Second—to study the use of electricity as it relates to good farm management practice. Third—to study the principles of operation and design of electrical equipment for safe, economic use on the farm and in rural industries. Fourth—to study the more fundamental electrical phenomena as they relate to physical and biological aspects of agriculture.

"The first part of our program has had to do with the collecting and collating of information on rural electrification research. To do this we have borrowed from colleges, men who were acquainted with rural electrification and its problems. These men visited a number of experiment stations and collected information on research, both active and completed. Much information that has not been published was gleaned through the conversations with workers.

"The men who visited the stations to make a study of applications of electricity to the poultry and dairy industries are well known. They included: W. T. Ackerman, of New Hampshire; C. N. Turner, of New York; W. C. Krueger, of New Jersey; J. E. Nicholas, of Pennsylvania; T. E. Hienton, of Indiana; P. T. Montfort, of Texas; and B. D. Moses, of California. (These surveys have been completed).

"The more fundamental studies, as outlined in objective 3, are just getting underway. They are being made in cooperation with colleges in three states—Virginia, Indiana and Nebraska. In making these studies we are keeping in mind the low-income type of farm. It is hoped that information will be gathered which will enable us to make an engineering anaylsis of farm programs and schedules to see how equipment may be fitted to farm operations so as to make the electrical program carry its own costs, and yield an income."

Since this statement was written, Government reorganization has brought the R. E. A. into the Department of Agriculture. The purpose of R. E. A. is to lend money to provide rural electric service. Let us hope that this more spectacular money lending activity will not blind the Department to its functions as a research and educational agency, and to the fact that the proper and profitable use of electricity is as much a farm problem as the proper and profitable use of fertilizers, combines or certified seed; and the possibilities for returns in increased income, better living, better health and a more stable agriculture are equal or greater.

## COOLERS FOR CHICKENS

There are more young chickens on farms this summer than a year ago. Laying flocks are also larger. When the supply is large, quality counts more than usual, and the poultryman who makes most is the one who gets most from his birds for a dollar spent. Egg coolers will be worth investigating. Hens ready for market may bring better prices if frozen in local plants and held for better demand. Lighting layers brings returns in excess of costs. Normally egg prices reach their peak in the fall.

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*Every house needs*

**Westinghouse**

# *PAYS FOR ITSELF!*

Mrs. W. L. Clark, R. F. D. No. 3, near Madison, Wisconsin.

## MRS. CLARK'S WESTINGHOUSE RANGE SAVES MORE THAN $4.50 A MONTH!

Mrs. Clark says that with her old stove, fuel bills "often ran as high as $7.00 a month." With her Westinghouse, Mrs. Clark does the same amount of cooking with less fuss and bother, and saves more than $4.50 a month! The solid-top Corox surface units "heat rapidly without the dirt and danger of an open flame, and can be *turned off* before a dish has finished cooking because the burner holds heat and continues the cooking for a long time. The range just seems to run itself, and I have much more time to do other things around the house."

Enjoy this economy and convenience, with a Westinghouse, the *only* range that's Farm-proved to Cook Fast, Cook Easier, Save Money! See the new models at your dealer's.

## SUPEROVEN COOKS BIG MEALS *EASIER!*

"The large oven on the Westinghouse Range enables me to cook a whole meal at once," says Mrs. Clark. "Because of the Automatic Control, I can do other things without worrying about my cakes burning. The warming oven makes cooking for a large family lots easier because I can keep meats and other finished dishes hot while I'm still cooking the rest of the meal."

***FREE!* "Farm Help from the Highline"**

Big, free illustrated book gives all the facts about Farm-proved Ranges and other Westinghouse farm helpers that pay for themselves in savings. Write Westinghouse Electric & Manufacturing Co., Mansfield, Ohio, Dept. 9100.

# Westinghouse *Electric* Ranges

# *The Answer*—EAR CORN IS BEING GR
## *by many farmers, and the ar*

IN our April issue we questioned whether practical business farmers could grind ear corn and snapped corn satisfactorily with motors of 5 horsepower and less. Comments were solicited and a summary of replies was promised.

The replies received have been very pleasing in showing a preponderance of evidence in support of small motor driven grinders. Six types and sizes of mills were reported on. In the quotations from readers below, letters have been substituted for the manufacturer's names. All of the replies except one stated that the users had found the small mills very satisfactory. About half were **really enthusiastic** in their comments on the performance of the new grinding equipment both because of costs and capacities. The one dissenter has gone back to a tractor and large mill. Not all of the letters were equally specific. Since it is the users' opinions which have real value, we have taken some statements both pro and con from a few of the letters on which you can pass your own judgment.

The tractor user, being in the minority, we will give him first place in this report. He is a farmer from Steward, Illinois. He says: "We have tried grinding ear corn with our 7½ horsepower motor and four different hammer mills. The mill we selected was an 'A' No. 87 and would grind 30 to 35 bushels of ear corn per hour with one-inch screen. We would not recommend less than a 10 horsepower motor if a farmer wants to grind very fast. We are now grinding ear corn for 70 head of cattle, using a 'B' No. 10 hammer mill and pulling it with a tractor." This Illinois experience must be "the exception that proves the rule."

From Eugene Bouic of Ostrander, Ohio, we have this comment: "We have a No. 2 'C' hammer mill operated by a 5 h.p. electric motor, and grind ear corn and all the small grains at an unbelievable rate of speed. On December 8 we made a test in which we ground 2,160 pounds of ear corn per hour, which is a lot of corn to handle with any mill. This was through a ½-inch screen, which is also quite fine for ear corn. The mill and motor handled this with ease and satisfactory to all who saw it. At the same time we ground with a ¼-inch screen 1,900 pounds of wheat, 1,960 pounds of soy-beans and 1,275 pounds of oats per hour. This mill will grind ear corn with a 5 h.p. motor to satisfy any reasonable person, and, we believe, at a lower power and labor cost than with a tractor."

Paul Kelso, a farmer of Mercer, Pa., has ground 13,780 pounds of ear corn since January 24 (to April 14) through a No. 1 "C" hammer mill driven by a 2 h.p. motor with a total consumption of 94 kw-hrs. of electricity. He says: "I put in the new short breaker plate, which has stepped up my grinding of ear corn one-third. I ground 18 bushels in 32 minutes through a ¾-inch screen."

From R. Mittelberg, Experimental Farm Superintendent of the Mooreman Mfg. Co., Quincy, Ill., comes this statement about another "C" No. 1 mill: "During the past winter we ground for 60 head of cattle, over 200 head of hogs, as well as 12 head of dairy cows and about 2,000 chickens. We marvel at this little mill's ability to meet our ground feed requirements."

Minnesota also grinds ear corn. G. R. Breitenfelt of Grasston, Minn., has a "D" hammer mill made in Minnesota to sell at $47.50 complete. It operates with a 3 h.p. motor and under test ground ear corn at the rate of 600 pounds per hour through a ¼-inch screen, 725 pounds per hour through a ⅜-inch screen, and 875 pounds per hour through a ½-inch screen.

These small mills seem to do more than just grind feed; they get farmers out of holes. A very interesting comment from this angle comes from Ralph G. Sams, Vice President and Secretary of the Federal Intermediate Credit Bank of Louisville, Kentucky. "About a year ago I was discussing with the county agent the disadvantage to which the small farmer is put in the preparation and mixing of home-ground feeds. I was explaining the difficulty in getting the customs hammer mill to come to my farm to grind a ton of feed. It seemed that he always came when my hired man

After reading these comments by other farmers it might pay you to put down just what it would cost you in time, money, spoilage and travel to grind your feed in the different ways available.

# GROUND WITH 1 TO 5 H.P. MOTORS

## *are saving money and labor*

was the busiest or else when it was raining and difficult to grind feed without having it damp. The county agent told me of the 'C' No. 2 hammer mill, which was within the investment and power limitations of the small farming unit, and I purchased one. Since installing the machine I have ground many hundreds of pounds of both soy bean hay and corn cob meal through a ¼-inch screen. I am delighted with my purchase and the feed on the farm is now ground and mixed at a time convenient for me to give it my personal supervision. With a system of four overhead bins we grind and mix enough feed in an hour to feed our cows for two weeks."

### Would Put Cobs in Furnace

With a little different slant on the matter R. R. Parks, Illinois Extension Specialist in Agricultural Engineering, writes: "I have had difficulty convincing many farmers that mills with less than 5 h.p. capacity were satisfactory for grinding ear corn. Most farmers want to do up the job in a much bigger hurry than that. While ear corn can be ground with smaller than 5 h.p., and to me at least, in a very satisfactory way, I personally prefer that we combine with our grinding unit a sheller and then grind the shelled corn, putting the cob in the furnace where it belongs."

A power company man who is also a farmer—John Paul Lucas of Charlotte, N. C.—expresses his conviction in this manner: "I have a 'C' No. 1 hammer mill on my poultry farm, where we also grind some ear corn for a few head of cattle. I don't hesitate to say that this little mill operated with a 1½ h.p. motor does a perfect job—literally an astonishing job—in grinding ear corn as well as shelled corn or small grain. If I were operating a dairy, or feeding a considerable quantity of ear corn I would use a 'C' No. 2 mill and 5 h.p. motor. Our agricultural engineers have tested these mills and given their unqualified approval."

The burr mill with cob crusher is also doing a job which is satisfactory to some farmers. Victor C. Hersh of Green Lane, Pa., got electric service in 1923 and the same year installed an "E" No. 1101 burr mill and 5 h.p. motor with 5-inch belt drive. He ground ear corn in the fall when it was soft and subject to spoilage. He would grind enough for one day in 5 to 10 minutes, and in those quantities it would not heat or mould. He grinds from 800 to 1,200 pounds of ear corn per hour, and for a good many years has averaged more than a ton a week. He changes burrs once per year. He is still using his 1923 mill, which cost less than $20 but thinks it time to buy a new one.

Down in Tennessee they leave the husks on the corn to protect it from insect injury. They, too, have been using some small hammer mills and we quote from Kenneth B. McPherson, Assistant County Agent, Fayetteville, Tenn.: "Since September, 1938, nine mills have been installed by our farmers driven by motors of 3 or 5 h.p.

"G. A. Rogers installed a 'C' No. 2 hammer mill driven by a 3 h.p. motor in September, 1938. He consistently gets 600 pounds of ear corn ground in an hour, using ½-inch screen. He feeds 30 milk cows and grinds around 3,000 pounds per month. He not only grinds his corn but his hay as well and the mill is very satisfactory.

"J. Webb Shofner installed a similar mill and motor in February. His capacity is the same as above and he reports the mill to be very satisfactory.

"Rob Wilson purchased an 'F' mill and 5 h.p. motor in January. On time test he ground 1,461 pounds of snapped corn in an hour through a ½-inch screen. He consistently grinds 1,000 pounds per hour.

"Henry Terry, Jr., has an 'F' mill and 5 h.p. motor. By test he ground 1,520 pounds of ear corn in an hour and consistently gets 1,150 pounds per hour. He feeds 32 head of milk stock and grindsabout 3,600 pounds of snapped corn per month.

"The other cases are similar with the exception of two men who bought these small outfits to do commercial grinding. They found the 5 h.p. too light where ear corn was fed to mill for 8 to 10 hours daily without stopping."

There you have the story, uncolored—just as it came to us. We believe these comments direct from the shovel end of the mill will be worth much to you in planning your own course. If we were to summarize the replies, including information not given in the quotations above, it would be something like this:

### Some Conclusions

There is a decided swing to small hammer mills powered with motors under 5 h.p. for all kinds of grinding, including ear corn and snapped corn. The reasons given are: Lower cost of mills, lower cost of motors, less expensive wiring required, lower cost of power, freshly ground feeds, no waiting when feed is needed, less spoilage, and labor and cash costs less than going to the mill or waiting for the custom grinder. There has been great improvement in small hammer mills in the past few years. For small capacities, burr mills are still doing a job but are losing out to hammer mills where both have been tried. No reports were received on combination chopper and burr mills. These small mills are pre-eminently farm mills. They will grind hay and corn stalks at moderate rates of speed. They are excellent for shelled corn and all small grains and are labor savers when properly connected through sprouts to overhead bins. While being too small for heavy commercial grinding operations, some are giving excellent results in smaller mills and for meal grinding. Farmers having small to fairly large grinding requirements will probably be better off financially if they grind with small mills. Farmers having what they think are large grinding jobs might well take paper and pencil, after reading these comments of other farmers, and set down exactly what it will cost in time, money, spoilage and road travel to do your grinding in the different ways available. It might surprise you.

# THE SILVA HOME GOES MODERN

**Starting from Scratch, the Silvas Have Farmed Their Way Into a New Home That Removes Any Desire to Move to the City**

By EARL BURKE

*Mr. Burke is a writer and business analyst from Oakland, Cal.*

WHEN Mr. and Mrs. Silva were married seven years ago, it seemed like a far away dream to even think of living in a farm home equipped with the labor-saving devices that would eliminate drudgery and shorten long working days. Those advantages seemed only for city homes. But the Silva's dream came true. Today they are living in a modern farm home fitted with electrical aids whose operation permits leisure time for Mrs. Silva to participate in those social activities every woman loves, and for her and her husband to enjoy a happy and healthy existence. Their home life today, compared to that before they built their new home, involves just as magical a change as anything ever told of fabled Aladdin and his wonderful lamp.

Mr. and Mrs. Silva own and operate an 80-acre farm five miles west of Escalon, in California's fertile San Joaquin Valley. Here they raise melons, sweet potatoes, beans and other garden vegetables. They vary their crops from year to year, but always raise a crop of melons.

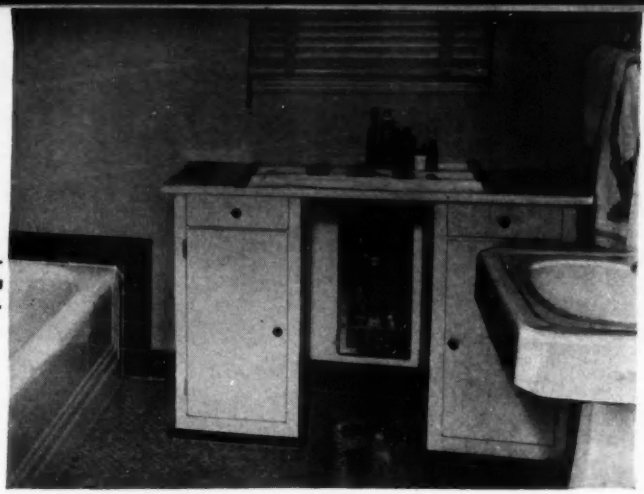
The Silvas started homemaking in an old house without electric service. Mrs. Silva was anxious to do her part in making their place a success and wasn't afraid of hard work. But her duties in the old-fashioned house kept her on the jump fourteen to sixteen hours a day. Every night she would find herself "completely all in." She cooked with an oil stove that "didn't act the same twice." On the back of the stove always stood a wash boiler, under which a fire was going constantly to heat water for washing dishes or laundering or bathing—and all the water had to be pumped and carried into the house from a well. On Mondays she was invariably tired out after laboring over the wash tub and a knuckle-skinning washboard. On Tuesdays there was the long grind of ironing with heavy black sad irons. Eventually to lighten this laborious task, she lugged the heavy basket of clothes to the home of a relative who had an electric hand iron.

Nightly the couple would try to read the newspaper by the light of an oil lamp. The flickering light tired their eyes so quickly they usually quit after a few pages, and "never did find out the news in the second section."

But the Silvas worked hard, and their affairs prospered to the extent that they determined to banish the household drudgery and inconvenience, especially the oil lamps. Made-over improvements would fall far short of giving them the kind of home desired. They decided to build an all-electric house, into which they moved recently. The cost was moderate and the design is typical of farm homes in the San Joaquin Valley. In planning for installation of proper electrical equipment they were guided by the advice of the power company engineers.

It's a different story now in the attractive kitchen, with its color scheme of yellow and black. Venetian blinds shade the windows on sunny days. A cabinet type of tile sink has a good lighting fixture installed over it. Here is an up-to-date electric range, latest-type refrigerator, an exhaust fan; also five double outlets for conveniently attaching small appliances. Among these are a waffle iron, coffee percolator, toaster, and iron. Under the

**Left:** Mrs. Silva preparing breakfast in the kitchen. Note the lamp, outlets, switches, refrigerator and range.



**Right:** Bath room in the Silva Home, showing built-in wall type electric heater under the cabinet.

table in the breakfast nook is a useful double outlet for connecting two appliances at the same time.

In the basement is an electrically-equipped laundry, with an automatic water heater nearby. The water supply comes from a pressure pumping system operated by an electric pump.

The pressure pumping system also supplies ample water for both the bath tub and the shower in the bath room. Mr. Silva can now enjoy a refreshing shower when he comes in from the fields—tired, hot and dirty.

The entire house is scientifically lighted according to the "Better Light—Better Sight" program. This includes shaded center fixtures and I. E. S. floor and table lamps. All lamps are shaded so that there is good illumination but no glare.

The dining room has two double convenience outlets for table appliances or cleaning devices. In the living room are five outlets for lamps or appliances, and are specially arranged for the radio.

During the brief cold weather season both bedrooms and the bath room are kept comfortable and warm by wall-type electric heaters.

There is no fumbling around in the dark when they wish to go to town at night or come home late. Three-way switches are used to control their front hall, the garage and the yard lights.

Mrs. Silva makes this comment: "Electricity in our home has made all the difference in the world to us. Now my husband and I really live, and have leisure for social activities and recreation. Electric service has made life easier, happier and healthier for both of us. And, best of all, our electric bills are pleasingly low."

—*Be proud I am a Farmer*—

# APPLE JUICE

By HARRY L. GARVER

Investigator, Washington C.R.E.A.

MANY farms have a tree or two of cider apples, but just because it is a long way to the community cider mill the apples are allowed to fall to the ground and rot or be eaten by the hogs. With a little ⅙ or ¼ horsepower electric motor to turn the crank there is no reason why the juice should not be squeezed out of the apples and consumed by the family or sold. There are various methods of preserving it in its fresh state but with the advent of the frozen pack locker type refrigeration plant, the problem of having cider with all the freshness of today's making at any time of the year is completely solved.

If you don't like to turn the crank, just put a large grooved flywheel on the grinder shaft and belt a small motor to it. Take a look at the picture and see how Mr. Packard does his. He has a little ¼ horsepower motor belted to his mill and says it beats hand turning so far that there is no comparison.

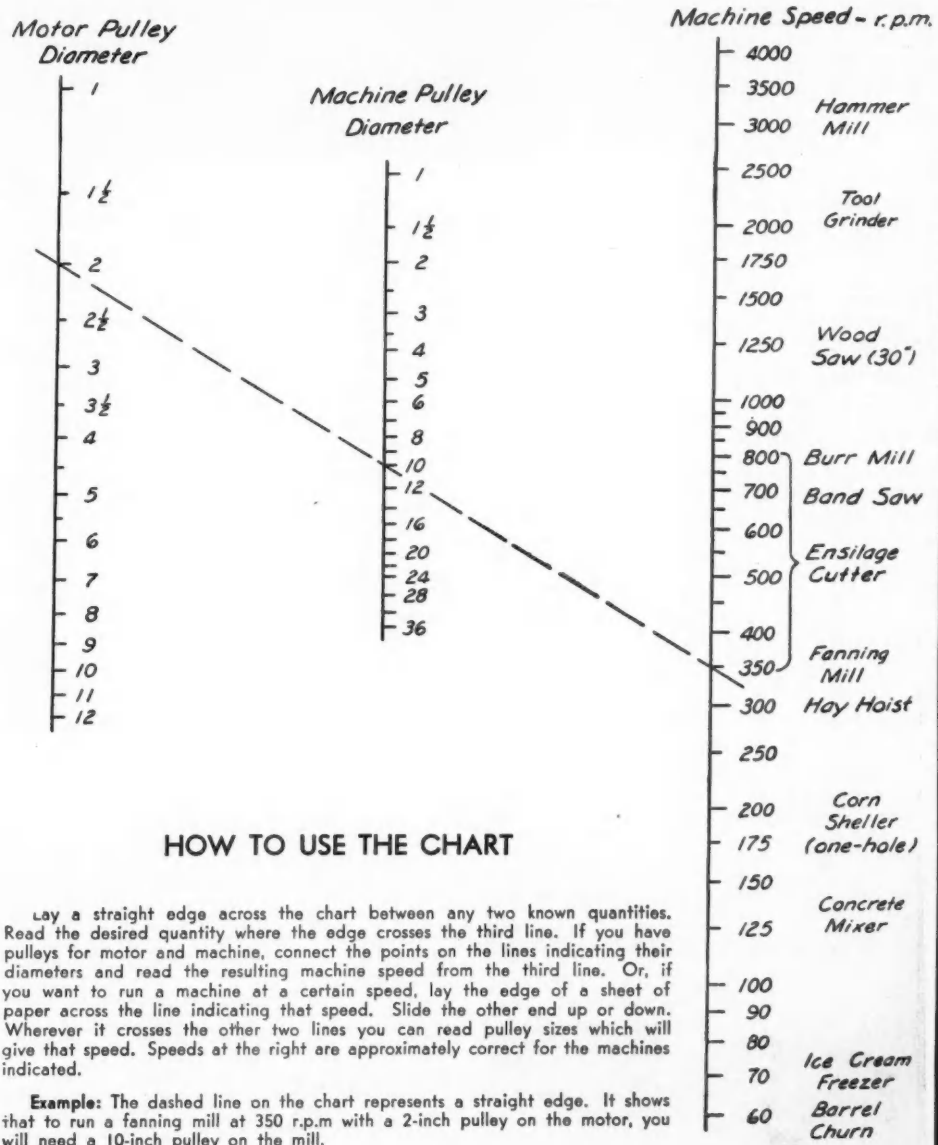
Apples can be ground faster than one man can handle the press and empty the pomace. Mr. Packard gets a boy to help him, and together they make around 25 gallons per hour.

The fresh apple juice has a ready sale in town at 35 cents per gallon. Not only does the motor-operated cider mill serve as a means of bringing in some ready cash, but it helps dispose of apples that would otherwise be unsalable. The foregoing statement doesn't mean that a market is thus obtained for wormy apples. Mr. Packard picks out and disposes of the wormy and otherwise objectionable fruit.

# WHAT SIZE PULLEY?

**Use This Chart for Selecting Pulley Sizes to Give Desired Machine Speeds with 1,750 R.P.M. Motors**

Prepared by J. W. WEAVER, JR.
Agricultural Industries Division, T.V.A.




## HOW TO USE THE CHART

Lay a straight edge across the chart between any two known quantities. Read the desired quantity where the edge crosses the third line. If you have pulleys for motor and machine, connect the points on the lines indicating their diameters and read the resulting machine speed from the third line. Or, if you want to run a machine at a certain speed, lay the edge of a sheet of paper across the line indicating that speed. Slide the other end up or down. Wherever it crosses the other two lines you can read pulley sizes which will give that speed. Speeds at the right are approximately correct for the machines indicated.

**Example:** The dashed line on the chart represents a straight edge. It shows that to run a fanning mill at 350 r.p.m with a 2-inch pulley on the motor, you will need a 10-inch pulley on the mill.

The J. F. Rigdon sorghum mill near Woodburn, Oregon, produces around 1,800 gallons of syrup yearly and is operated by a 5 H.P. electric motor.

# 57 YEARS EXPERIENCE IN SORGHUM MAKING

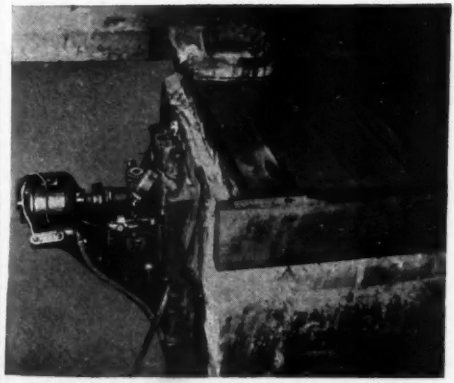
By BEN MAXWELL
Oregon Farmer and Writer, Salem, Ore.,
R.F.D. No. 3

FIFTY-SEVEN years' experience in making sorghum syrup has been the lot of J. F. Rigdon, who owns and operates his own sorghum mill on route 2, Woodburn, Oregon. When Mr. Rigdon started making sorghum in the early 1880's, mule power was in vogue. Now his mill is powered by electricity and, in the owner's words: "It is cheaper power, more reliable power and cleaner power."

This Oregon mill produces 1,800 gallons of syrup annually and gives the owner a nice profit in custom pressing and retail sales. For custom work he receives 35 cents a gallon for pressing the juice and evaporating the syrup.

Use of electric power has helped keep production costs low and profits satisfactorily high. For instance: Before the 5 h.p. electric motor replaced a gasoline engine of like rating, cost of power for the press amounted to $1.25 a day. The engine used 7 gallons of gasoline daily and, at the end of the sik weeks' season, cost of power amounted to $62.50. Now, thanks to a compact electric motor that occupies a minimum of floor space, cost of running the sorghum press over the same period of time is less than $8 for electricity used by the 5 h.p. motor. Here the seasonal saving amounts to $54.50.

Formerly cost of power for the press added a charge of 3½ cents to each gallon of finished syrup. Now, with the electric motor running the press, this charge has been reduced to less than half a cent.



A one-quarter H.P. electric motor operates an oil burner beneath this evaporator pan. The saving in fuel costs over a six weeks' period of operation, as compared with cord wood formerly used, is $190.

Evaporating and cooking syrup is likewise facilitated by the modern, electrical way. A ¼ h.p. motor operates an oil burner providing the evaporator pan with an intense but uniform heat that enables this plant to reduce green juice to finished syrup in an hour's time. It is an economical method, too.

Diesel fuel oil injected into the fire box beneath the evaporator pan by the small electric motor costs $1.25 a day for normal operations consuming 25 gallons of fuel. Cost of running the ¼ h.p. motor is so trivial that Mr. Rigdon has never isolated the charge.

When cordwood supplied heat for the evaporator pan the daily consumption averaged 1½ cords of sound, fir wood. Although Western Oregon has an abundance of this natural fuel, costs per cord run high. A day's operations with cordwood fuel cost not less than $6 and often more. Seasonal costs for evaporating with cordwood amounted to $252. But the electrically operated oil burner provides more uniform, cleaner heat for $1.25 a day and that is only a fourth of what Mr. Rigdon was paying for cordwood. Adaptation to this modern, efficient fuel resulted in a seasonal saving of $189.50 and a saving of 10½ cents a gallon on production costs for the finished syrup.

Application of electric power to sorghum production has resulted in a total seasonal saving of $244. Annual production averages 1,800 gallons of syrup. When gasoline was used for power and wood for fuel these costs were 17½ cents per gallon of finished product. Now, with electric power and modern heating, these production costs have been reduced to less than 4 cents per gallon.

Besides, as Mr. Rigdon so cheerfully acknowledges, "it is a more reliable and cleaner way of making sorghum syrup."

# HOW
# WE DO THE THINGS WE LIKE TO DO

By C. D. STEINER

*Mr. Steiner is a farmer, lecturer and educator of wide experience. His choice is farming. He enjoys it. The farm is near Pandora, Ohio.*

HOW to find enough time in addition to doing the regular farm work to keep the lawn well trimmed, flowers blooming throughout the season, and shrubbery and trees growing in sufficient numbers to make a fine landscape effect is one of the difficult problems of farm management. Practically all farm folk want their farm homes to present a tidy appearance but how to have them is often more than their time, strength and finances will permit.

Ours is an 80 acre farm. We specialize in poultry, carrying about 1500 laying hens and producing all the corn, wheat, oats, alfalfa and soybeans needed for the laying flocks and to raise 1000 or more pullets to laying age. We hire very little help. It is seldom that my wife has any one to assist her about the house except at housecleaning time and even then she does most of the work herself. Our total bill for all farm labor last year was something like $250. And we haven't made slaves of ourselves either in doing this farm work. Our children are grown and away from home, so there was no additional or "free" help other than that we employed from outside the home.

## Modern Farm Management Does It

How do we do it? The answer is largely electricity and electrical equipment together with modern farm equipment and management.

We have about all the modern electrical appliances such as lights, kitchen range, refrigerator, irons, motors, sweeper, washer, bath room heater, water heater, sewing machine, hair curler, pumps, popper, toaster, waffle iron, fans, clocks, brooders and electric fence. Practically all great labor savers, some more than others. The total amount of labor saved throughout the year with these appliances just about saves us an extra hand on the farm and in the house. Our total cost for current throughout the year at our present rate amounts to an average of close to $12.00 per month. That means a considerable saving of money on labor which electricity gives to us.

Our equipment was installed as we had the money to pay for it and in the order named above. Others would possibly choose differently, but the first five occurred to us as being of greatest importance and the greatest step savers. It is now fourteen years since we made our first purchase and we shall continue to add others as we feel we can afford them. Excellent as electricity is there is such a thing as over-reaching one's self in making investments as with everything else.

Electricity has taken so much of the drudgery out of farm work that I am doubtful if we would stay on the farm without it. To be compelled to do a lot of farm work that can be done better and more speedily by electricity and at a fraction of the cost has a tendency to deaden one's interest in farm life. Those menial tasks cannot help but prompt the feeling that one is making of himself the cheapest kind of a cheap servant.

This freedom from drudgery of farm work permits my wife and I to do more of the things we like to do. One of these is keeping our farm home in fine shape and growing flowers, shrubs and trees wherever we think they will add to the beauty of the place.

---

CORNELL dietitians say that a potato has more in common with an orange than with white bread or macaroni. Potatoes and oranges both contain calcium, iron, carbohydrates, phosphorous, and vitamins A, B and C.

# FLIES!

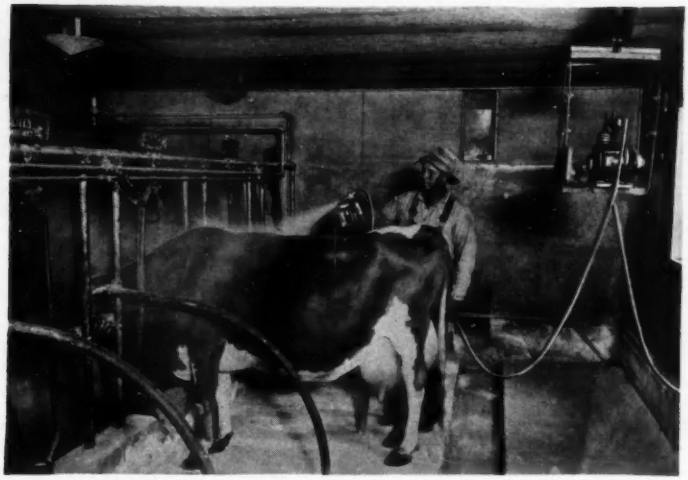
## What Can Be Done About Them

FLIES are filthy! The little hairs on their legs are minute but ample to carry filth and disease germs from manure pile and outhouse to milk can and table foods. The sucking proboscis which imbibes the decaying matter can also burrow into one's skin, leaving a load of microbes in the excavation. Flies carry disease, they provoke profanity by biting bald heads and buzzing over sleepers, they are a nuisance in dairies and they may implant sleeping sickness in horses.

How can electricity help to control them?

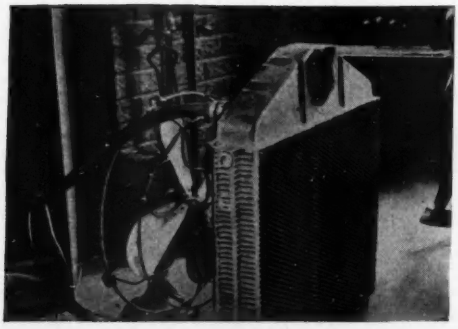
Electric fly traps and electric screen doors have been mentioned in these columns. They are made with the screened area covered with small metal bars carrying high voltage electricity which is death to flies but harmless to humans. The screens are set in specially made heavy doors, insulated and with guard screens and transformers. They cost around $35. Traps similarly built, however, may be bought for under $10. Users report that the consistent use of these traps has resulted in marked decreases in the number of flies. They kill the breeders. The traps may be baited with sour milk at first, but as soon as the flies start to accumulate, their odor attracts others. The traps are best used outside of the house and dairy, as dead flies will be scattered about them.

Spraying is effective in the dairy and also in the house when rooms can be closed for a while. The atomized sprays are volatile and many of them are not injurious to house furnishings. The accompanying illustration shows a common type of motor-driven compressor unit and spray gun. This equipment may also be used for small jobs of paint spraying. Other types of electric compressors are made to be carried on a strap slung over the shoulder. They may be purchased for as little as $15 complete. Walter G. Anderson, a farmer near Ebensburg, Pa., says his motor driven sprayer uses only one-fourth as much spray as the old hand gun, and does a better job. His spray liquid costs $1 per gallon.



Mr. Anderson also has a clever and inexpensive method of keeping flies out of milk cans. Flies will not stay in a breeze; so he has a small electric fan which he directs across the top of the milk can—and the flies stay out.

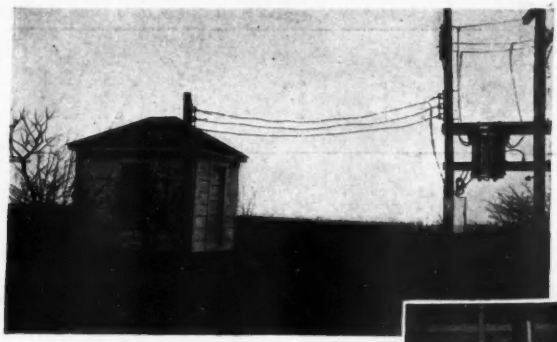
GEO. W. KABLE.



## Running Water Cools Living Room

THE illustration shows one method of cooling a living room where the summer water supply is cool. The old car radiator has garden hose connections soldered to the inlet and outlet pipes. Water is circulated through the radiator and out into the yard where it is used for sprinkling. The large fan behind the radiator blows air through it and cools the room. Such an arrangement is quite effective in moderate sized rooms and with water temperatures around 50 to 55 degrees.

**Right:** Pump house and substation for the pumping equipment used at the Rice Branch Experiment Station, Stuttgart, Arkansas.



**Below:** This 40-H.P. 3-phase electric motor and vertical centrifugal pump furnish the water to irrigate rice at the Experiment Station.

# IRRIGATING RICE IN ARKANSAS

By T. E. HIENTON

RICE growing is commonly associated with China by those unfamilar with the production of that crop in the United States. It is astonishing to find that some 170,000 acres of rice are grown annually in Arkansas and that it stands third in value among the crops of that state, being exceeded only by cotton and corn. An even more interesting fact is that electric motors exceed other types of power units in operating the pumps which provide water for irrigating the rice during the growing season.

The area devoted to rice growing in Arkansas is located chiefly in four counties, called the Grand Prairie area which produces from ⅔ to ¾ of the crop of that state. This situation is due to a combination of a suitable soil of approximately level surface with impervious subsoil and underlying water bearing sands.

The importance of these factors is due to the necessity for irrigating rice during its growing period. The impervious subsoil and level soil surface enable economical use of water during the irrigation period while the water bearing sands beneath serve as an available, abundant source of water supply.

The irrigation period usually begins when the rice plants are from six to eight inches high and commonly lasts from 90 to 100 days. Water submerges the soil surface from three to six inches until the crop is nearly mature. Professors Carter and Engler of the Agricultural Engineering department of the University of Arkansas indicate that a period of 70 days of 24 hours each, probably represents a normal pumping condition.

Power for operating the pumps to irrigate the rice is furnished chiefly by two types of power units, diesel engines and electric motors with a third type, spark ignition engines furnishing power for a small number of pumps. Figures reported in Bulletins 261 and 371 of the Arkansas agricultural experiment station indicate that the number of pumps driven by electric motors has been steadily increasing in the Grand Prairie region. In 1931 there were 320 electric motors reported in use, while 451 were listed for 1936 and 582 for 1937, an increase of more than 80 per cent in 6 years with no increase in the total number of pumps in operation.

Several reasons for this increase in the use of electric motors for power for pumping were recently given the writer by L. C. Carter in charge of the Rice Branch Experiment Station of the University of Arkansas. These included the relatively smaller investment required for electric equipment with smaller depreciation charge, reduced labor cost and simplicity of operation.

## Electric Fences

The *electric* fence is dangerous if improperly designed and installed, but a boon to better pasture management, and fence effectiveness and economy, if built for safety and used intelligently.

We have repeatedly issued warnings against the use of questionable fence controllers and the attempt to save money by improvising home made equipment. Again we warn you. The fence controller, while small and apparently simple, involves most profound electrical design and correspondingly indeterminate biologic reactions. Because of the possible hazards, few power companies or colleges recommend the use of electric fences. ELECTRICITY ON THE FARM does not recommend them. However, utility men who are also farmers use them; colleges use them; and we would use them if we farmed.

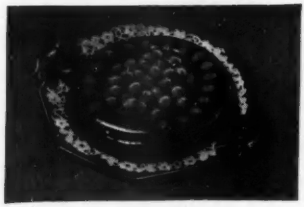
Probably no piece of electrical farm equipment has come into such rapid and widespread use. In the past we have refused to advertise electric fences. We are now changing this policy because

(*More on page* 23)

# Electrical HOUSEKEEPING

*Conducted by GAIL MEREDITH*

## Making the Most of the Cold—For Salads



A cooling salad.

THERE is art and skill but no magic in concocting a good salad. One of its most important ingredients you can neither see nor taste. Cold. Cold for the bowl it is mixed in, cold for the fork and the spoon and the plates that serve it, cold for the materials that go into its making.

If you wash the greens thoroughly as soon as you come in from the garden with the day's supply, if you let them stand in cold water for a few minutes, then put them away in the refrigerator in a covered enamel pan or an oiled silk zipper bag, you will find that a few hours in the cold makes them so crisp they all but crackle when you take them out for your salad.

Cold speeds up the hardening of a salad with a gelatine base like this.

1 tbsp. gelatin
¼ cup cold water
1 cup boiling water
¼ cup mild vinegar
1 tbsp. lemon juice
¼ cup sugar
½ teaspoon salt

Soak the gelatine in cold water for five minutes; dissolve it in boiling water. Add the sugar, vinegar, lemon juice and salt and set in bowl in cool place to harden. Before the mixture starts to congeal, add one half cup finely cut cucumber, one half cup grated raw carrot, and one fourth cup finely cut pineapple.

The cold of your mechanical refrigerator chills the fruit you want to use. Melons and peaches, apples and pears come out of the cold to make fresh and inviting salads.

The other day at a luncheon I saw a salad that every woman there planned to copy. It was half a cantaloupe filled with cubes of peaches and pineapple, covered with a fruit dressing. All of the fruit had been prepared in the morning and the peaches had been sprinkled with lemon juice to keep them bright colored.

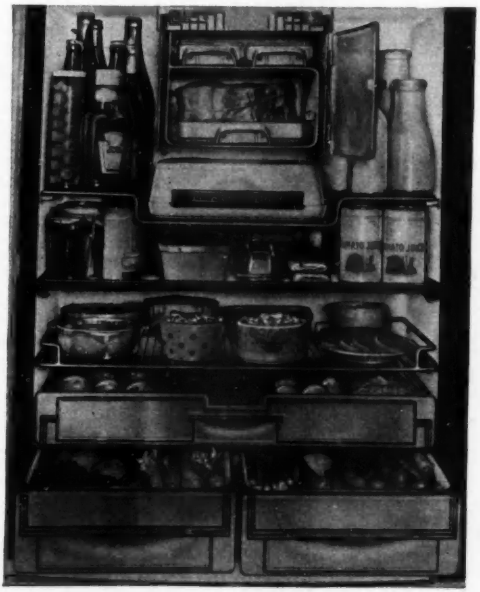
There are many salads we would never have if it were not for the safe protecting cold of modern refrigeration. I'm thinking of those we make from yesterday's baked meats and Thursday's vegetables. If yours is an ordinary family, you'll find the makings of a good salad waiting for you most anytime in your refrigerator. Something old and something new make this substantial salad almost a meal in itself.

### Orange and Lamb

2 cups cold cubed lamb  1 cup sliced celery
2 cups orange segments  1 cup grapes or cherries
2 tbsp. French dressing

Cut the meat and the celery in small cubes. Mix with the pieces of orange and the dressing. Let stand for a little while, then turn into a bowl lined with lettuce.

Plenty of salad timber ready here.



In a good electric refrigerator, you have the possibility of keeping on hand in your vegetable pan, day after day, garden fresh vegetables as cold as cold, ready to mix in a salad. Some like them cooked and some like them raw.

You can make a salad of one medium cauliflower, four radishes, one green pepper, two tablespoons finely cut chives, and a carrot. Soak the cauliflower head down in cold salted water for a couple of hours. Then drain it well and take its little flowerets apart. Slice the radishes very thin with the skins on, cut the pepper fine and shred with carrot. Mix all together with French dressing two hours before you want to serve. Salt it to taste. After the salad has been marinated for

a couple of hours, bring it out, cold and crisp and tangy, pile it on lettuce leaves and serve.

Do you have spinach and dandelion leaves on your list of salad greens? Some folks do and like them.

If you do not think you can persuade your family to try raw cauliflower, cook it first. But don't give up on the carrots until they have learned to eat the long yellow slivers as they do celery, crunching them down with plenty of salt. They are especially good with celery salt. Having them cold is just the next best thing to having them just as they come from the feathery carrot row.

Then last of all, the cold of the refrigerator makes it possible for you to have frozen salads to put a zip into meals on hot summer days. Here is a very simple one you can make if you have a can of those mixed fruits they call fruit salad on your pantry shelf.

2 cups canned fruit salad 1 cup mayonnaise
⅛ teaspoon salt 1 cup whipping cream

Whip the cream stiff. Blend with one cup of stiff mayonnaise. Add salt. Strain syrup from medium can of fruit salad and cut the fruit in half-inch cubes. Add to first mixture and freeze.

• • •

## When You Meet a Mixer

THE minute a new mixer comes to your house, you will be anxious to set it to beating something right away just to see it go. But even though it is a simple contraption that anyone can run, it is a machine and a machine with a good stout motor in it, too. So it is a wise thing to learn all about it before you put it to work.

The manufacturer's directions will help you. Studying the mixer itself will teach you to handle

Learn to put the attachments on the right way.

it easily. Turn the switch off and on, off and on enough so you are sure that your fingers will reach out to it automatically if you want to stop the motor. Study the speed controls and shift back and forth from one to the other until you know by the feel how to get just the speed you want.

Take the beater blades off and put them back in place. Learn the adjustment for the big bowl and the little bowl. Know how to put the attachments on, and how to take the motor off its stand.

If you'll do these things first, I promise you it will save you a good deal of confusion some day when you are hurrying to mix up a cake.

Mixers take very little care to keep them in fine fettle. Oiling according to the manufacturer's directions, the right kind, the right amount, at the right time; that is all. Too much can be as bad as too little oil, they tell me.

You can lift the motor from its stand to mash potatoes on the stove.

Then just keep it clean. You can wash the beater blades by running them in a bowl of warm suds, or you can take them off and wash them in the dish pan. Wipe the motor carefully with a damp cloth. It must never be put in water.

If you read Mrs. Sanford's story about hiding the mixer last May, you will know what I mean when I say there are two schools of thought about mixers. Mrs. Sanford and her cohorts like to have a smooth, empty work counter with all tools out of sight.

In the other and heretofore more vociferous school, are the folks who just have to have that mixer sitting on the work table, plugged into a convenience outlet and ready to go at the turn of its switch.

I can see points for both sides, though when it comes to practice, I'm a keeper outer, myself. If you do not know just where you belong, you'd better watch yourself to make sure you get your money's worth of help out of your mixer.

If you are a mixer hider, and there comes a day when you leave the mixer on the shelf or behind its cupboard door and whip up a cake by hand just because it takes a little more time and effort to get it out, if you find that happening in your kitchen, ten to five you really belong on the other side of the fence with the rest of us who keep our mixers right at our elbows, plugged in, ready to go.

• • •

## Making Dresses for Girls

THE charm in girls' dresses depends largely on simplicity.

When you are going to make your daughter a dress, let her do some part of it. Ask her to choose the colors, the materials and the patterns. Then let her cut out the small pieces of the pat-

## FROZEN FOOD LOCKERS

*(Winning Letter for May Contest)*

Peas, I could have sworn were straight from the garden, beefsteak tender and tasty, a shortcake layered with luscious strawberries, these were my introduction to quick frozen foods. It was while visiting in Ames, Iowa, that they formed a part of a never-to-be-forgotten meal. They also formed in me a determination to have locker space if ever such a plant was established in my home town.

And was I tickled pink when a year ago last November the Mendota, Ill., Food Locker Plant was opened! It consists of an attractive brick building with a room housing the refrigeration plant and office, a cooling room where meat hangs for several days before cutting, a cutting room, a compartment where foods are quick frozen to retain moisture and flavor, and 520 food lockers, each 16"x20"x30", and able to accommodate about 250 lbs. of food. To the rear is the smoking and lard rendering equipment. During the first year 135,000 lbs. of meat was stored, aside from 2,800 pts. of vegetables and fruits. Present indications show amounts will be trebled this year.

We were among the locker's first customers, and are still one of the most enthusiastic ones. No more eating of bacon until the strip was gone no matter how we tired of it! No more moldy hams! No more spoiled meat occasionally found in the canned product. No more broken fruit jars or rubbers to replace. No more firing the old range for the 3-hour cold pack. Now just the actual work of butchering, cooling and cutting meat when we have time and letting the locker men do it for a small extra charge when we don't. No more poultry surplus (other than market) to be sold at any old price. Fish, ice packed and quick frozen bring back memories of our fishing trips. Young frozen rabbit fried as chicken, pigeon pot pie from the time they seemed to use our barn for their ganging place both taste mighty good. Even cases of venison from hunting trips have been stored in our local locker.

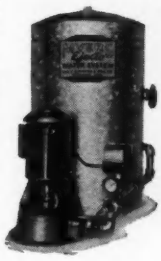
And the vegetables and fruits; strawberries sugared and frozen with their dewy freshness intact; blackberries luscious and sweet and ready for pie; raspberries whole and firm and delicious. How's that for a dreary January day? And peas young and tender without the flatness of the cold pack, beans and asparagus and corn. Even crispy cabbage if there's room. Oh, above all, I'm thankful for the fruit and vegetables!

I haven't tried everything yet, but this year I'm adding sliced fresh carrots and beets and lots of other things. I find discarded butter cartons just the thing for economical storage. They hold plenty for a family of four and pack closely.

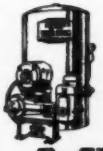
(*More on page* 18)


HAPPIER.. HEALTHIER.. WEALTHIER..

Since we got our MYERS



MANY a farm family has been introduced to a wealth of comfort, convenience, sanitation and safety through the installation of a reliable MYERS Water System. And those same families also enjoy added wealth of another kind—real cash which comes from time saved in home and barnyard, work done more effectively, livestock kept in better condition, gardens made more productive—as a result of the *adequate capacity* and unfailing durability built into their dependable MYERS. For nearly seventy years, MYERS has been supplying trustworthy water service equipment to the farmers of America. You're sure to find a MYERS Water System that exactly fits your needs. Deep and shallow well models; for operation by electricity, gasoline engine, windmill or hand power. Write today for free booklet.



There's a MYERS dealer near you. Ask him about the new electrically operated MYERS *Ejecto* Water Systems; the simplest, quietest, most trouble-proof water systems ever designed. For wells up to 120 feet deep. Only one moving part in pump.

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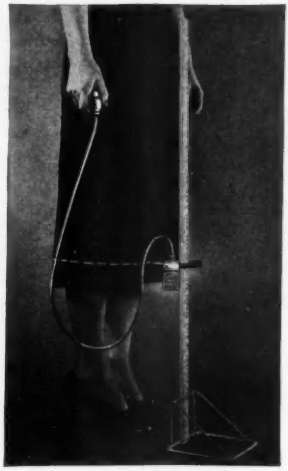
WS 9-19

Take Off Your Hat to the MYERS

tern, measure the hem, and sew on the buttons. It will be grand for you to work together, and she'll be happy to do these easy tasks for her own wardrobe.

Trimmings suitable for a girl's dress can be made on your own sewing machine. For shirring you can use the gathering foot; with it you can make row after row of even shirring that is both strong and neat. Then there is the new elastic thread that you put on the bobbin of your sewing machine, just like ordinary thread, and without any extra work (it shirrs as it stitches) you can make elastic shirring for cuffs, waist bands and pantie legs.



For perfect even hems.

Delicate hemstitching and pecoting, tucking and ruffling, can also be made with your sewing machine attachments. A tiny bow, a bit of ric-rac braiding, and decorative binding all make attractive and appropriate trimmings.

A tiny monogram on a collar or pocket is always very pleasing. You can applique it with the Zigzagger (an attachment for your sewing machine that makes a zigzag stitch, which is adjustable), or embroider it with the signature or darning stitch.

Hems in growing girls' dresses should be made deep enough to allow for lengthening. It is a clever trick to put a tuck in the hem when making the dress, thus giving extra length when needed for lengthening, and avoiding the necessity of a false hem. Make the tuck, with a long basting stitch, on your sewing machine. This can be taken out very easily. The Skirt-marker, which is a small container filled with powdered chalk, and which clamps on a yardstick or door, measures hems accurately and quickly. A mere squeeze of a rubber bulb attached to the container puffs out a whiff of chalk. You make these markings all the way around the hem. It leaves a straight even line which you follow to turn up the hem. A young girl can do this on her own clothes, and have lots of fun doing it. And you will use this handy gadget on your clothes, too!

The perfect finish for the seams in a girl's dress is pinking. For this there is an attachment for your sewing machine that takes practically no effort to use. You put it on the presser bar, run the machine and put the material through it. The result is a clear-cut pinked seam that will look neat and will not ravel.

• • •

## LESS WORK for the Farmer's Wife

By MABEL A. SANFORD

I HAVE one electrical appliance that is very dear to my heart. I mean my electrical roaster. It was a gift to me because I had felt that I could not afford it, that it would be an extravagance. But since I have used it I have changed my mind. Now I'd almost let the house be torn down around me before I'd give up that electric roaster.

I was not always a farmer's wife. We lived for many years in the city, then health made it imperative for us to move into the healing quiet and out-of-doors life of a small citrus grove in Southern California.

I have always liked country life, but of course I did expect my housework to become much more of a burden here than it was in the city where I had so many conveniences. But my mother said, "Your work needn't be a burden if you have the right equipment." And she gave me the roaster.

She was right. Cooking constitutes a large share of the housewife's work. My electric roaster has

(*Here from page* 17)

The cost of the locker is $10 per unit per year. Too high priced you say? Think of the spoilage mentioned before. Think of the fuel it took to can your stuff; think of the time it took. Think of the pork or beef quarters your locker man will find customers for at better than market prices if you have a surplus. But most of all think of how good your out of season foods will taste, how your grocery bills will drop, how much variety your meals can have, how much attractiveness! Vision a juicy pot roast from your own prime beef, sliced carrots fairly gleaming with vitamins from your own garden, appetizing green beans, and a heaped dish of firm luscious red raspberries. You bet we like our lockers!

MRS. C. M. SETCHELL,
Mendota, Ill.

cut my work in half. I now prepare a whole meal in it, set it out in my back porch where it is out of the way. This lets my kitchen stay cool and comfortable for other work. If I want to can fruit or make juicy pickles, my kitchen is free for it. I have the whole space on the stove for my work.

At other times I can put my clothes on the stove to boil, or I can dye a dress without having to keep one eye on the clock in order to be sure to get through in time to start the dinner cooking for my ever hungry family. You see, my dinner is cooking all the while in my electric roaster out on the back porch.

Another big advantage to the roaster is that things do not burn in it. I can be off doing other things. I do not need to keep hurrying to the kitchen to see that there is enough water on the vegetables, or that the meat is basted. I merely allow plenty of time, set the regulator fairly low and then forget it until I am ready to dish up the meal. And what a delicious meal it is, too, for the even heat and the self-basting roaster keeps the food juicy and delicious. On Sundays I put my meal in the roaster in the morning, go comfortably off to church, and have dinner well-done and piping hot when I get home.

### Cooks Almost Anything

What can I cook in my roaster? I can cook almost anything. There is the large roasting pan if I have a large roast or fowl. Then I put the vegetables in around the roast. But if I have a smaller piece of meat, there are two separate covered aluminum pans that fit in each end, in which I can cook vegetables, or soups, or fruit sauces, or whatever I want, without its coming in contact with the meat at all.

Many new features have been added to the electric roasters since I received mine, and there are many good makes on the market at very reasonable prices today. But I shall never part with mine. If I can ever buy another, I shall keep them both, for mine has taken the burden out of the life of a farmer's wife and left only the good things, the sweet-smelling fresh air, the nerve soothing quiet, and the independence that one gets on one's own acreage, away from the hurry and push of an office. I am so glad to be a farmer's wife.

### August Contest—My Sewing Machine

**There are hundreds of ways we women earn money if we can believe that old saw, "A penny saved is a penny earned." Perhaps we never count up our earnings that way because it is more fun to figure up added rather than saved income. I do not care how you figure it, but I would like to have letters this month on the way you have earned money with your sewing machine.**

**We will pay five dollars to the writer of the most interesting and helpful letter on "My sewing machine earns me money by—"**

**If there are any other letters we can use, we will pay one dollar each for them.**

**Contest closes August 20.**

**Send your letter to Gail Meredith, 1026 Seminole Highway, Madison, Wisconsin.**

You can see the extra value everywhere the moment you examine an AERMOTOR Water System. And when you look inside an Aermotor Pump you see numerous exclusive features which offer you something different and better. For example:

1. DOUBLE U-BAR feature keeps gear case completely closed. Prevents water, dirt or any foreign matter from getting into it.
2. DOUBLE OIL RINGS provide constant lubrication and eliminate complicated oiling mechanism.
3. DOUBLE ADJUSTABLE PITMEN make possible 2 lengths of stroke.
4. DOUBLE GEARS keep the pumping load exactly balanced and insure quiet operation.
5. LONG STROKE assures longer pump life and allows use of a smaller cylinder.

You can have all of these advantages at a surprisingly low price.

Get the facts.

**MAIL COUPON NOW**

Dept. E-2
Gentlemen: Please send FREE copy of your "FACTS" Book about AERMOTOR WATER SYSTEMS.

Name_____

Address_____

**AERMOTOR CO.** 2500 ROOSEVELT ROAD CHICAGO, ILLINOIS

250 G. P. H. Automatic Shallow Well Pump.

Silent Operation. Mounted in Rubber.

30 Gal. galvanized tank.

Capacitor Motor with built-in overload protection.

Easy Accessibility.

V-Belt Drive.

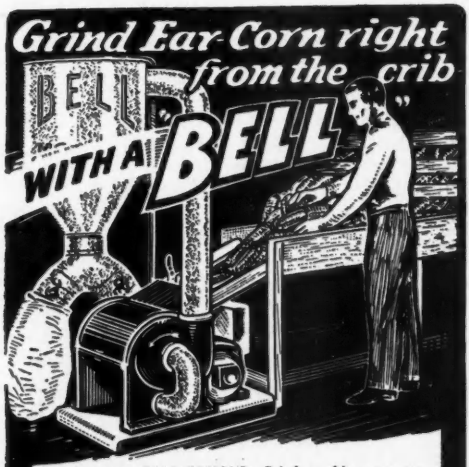
Completely assembled in one crate.

**JUMBO "25"**

—With bronze main bearing — bronze crosshead and connecting rod—Patented centrifugal oiling system and self-adjusting piston rod wiper — a sturdy, quiet running system with outstanding exclusive features and economy of operation. Compare Uniflow values with the market. Write for a copy of our 1939 catalog.

**UNIFLOW MFG. CO. ERIE, PA.**

**DEEP, SHALLOW WELL PUMPS & SYSTEMS**
**WATER SOFTENERS • CELLAR DRAINERS**




Capacity up to a TON AN HOUR—Grinds anything, even ear-corn with husks, oats, wheat, barley, alfalfa, clover. Operates for as little as 1/3 of a cent per 100 lbs. Not damaged by stones, sticks or pieces of steel.

**SOLD ON APPROVAL—TERMS**

BELL'S "MODERN" HAMMER MILL sells for a low price; get one on approval today. See how much money you can save by grinding your own stock feed. Get the extra profit made by feeding ground grains and roughages to Hogs, Cattle, Sheep, Horses and Poultry. Send for Big FREE Book, "Feed Grinding for Profit on the Farm." No obligation, so write today.

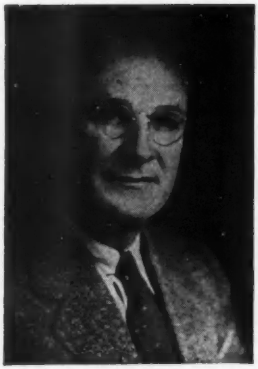
**C. S. BELL CO.,** MFRS. Dept. 46 **HILLSBORO; OHIO**


## Agricultural Engineers Receive Awards

At the recent annual meeting of the American Society of Agricultural Engineers held in St. Paul, distinguished service medals were awarded to two prominent Agricultural Engineers.

Philip S. Rose

The Cyrus Hall McCormick gold medal is awarded for "exceptional and meritorious achievement in agriculture." The award was made to Philip S. Rose, Editor of the *Country Gentleman*. Mr. Rose, a charter member of the American Society of Agricultural Engineers, had much to do with the early development of the steam traction engine and gas tractor. For a number of years he was Editor of *American Thresherman* and of *Gas Review*. In his editorial capacity he has actively promoted soil conservation, particularly through the planting of lespedeza. During the past nine years, since his advocacy of this crop, it has grown from nothing to a total of fifty million acres in United States.



Harry B. Walker

Harry Bruce Walker, Chairman of the Division of Agricultural Engineering of the University of California, was the recipient of the John Deere Medal for "application of science and art to the soil." Professor Walker, formerly Head of the Department of Agricultural Engineering at Kansas State College, has been prominent in educational and engineering fields. He was a Captain in the Engineer Corps in France during the World War. He is a member of many engineering and honorary societies, and, of particular interest to readers of ELECTRICITY ON THE FARM, he has served as Chairman of the Kansas Committee on the Relation of Electricity to Agriculture and is now Chairman of a similar committee in California.

---

CALCIUM, in which milk is especially rich, is the most enduring element in animal life. In the skeletons of prehistoric man and animals, it has survived millions of years.

## Injector or Jet Pumps

Injector pumps have been in used on the Pacific Coast for about fifteen years. Their application is largely for domestic water pumping where the lift is greater than the suction limit of 22 feet; but larger sizes are also being used for irrigation. Sizes range from ¼ to 10 h.p. and are adapted to wells having casings of from 2 in. to 8 in.

The original injector pumps and most of the jet pumps on the market today are of the centrifugal type, part of the discharge of the centrifugal pump being diverted down into the well under pressure to operate the injector which forces water up into the suction pipe within reach of the suction of the centrifugal pump.

The pumps may be installed over the well or offset as desired. The pressure pipe may run down into the well inside of the suction line where the well diameter is small, or it may be run outside of the suction pipe.

## New Publications

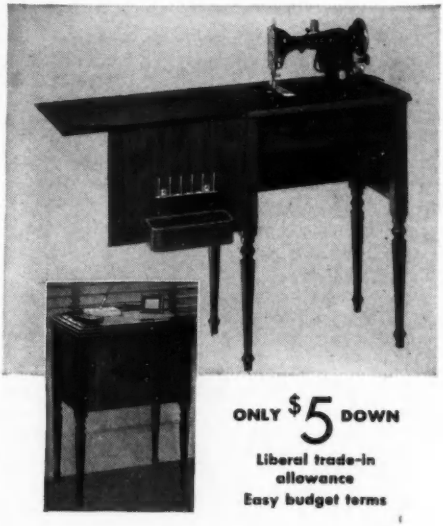
MECHANICAL MILK COOLING ON FARMS. U. S. Dept. of Agric., Farmers' Bul. 1818. Methods, refrigeration machines, costs, repairs, installation, operation, plans. 21 pp.

ELECTRIC MILK REFRIGERATION AT THE FARM. Pa. Exp. Sta. Bul. 375, Feb. 1939, 38 pp. Technical. Contains curves on cooling rates in wet type coolers. Pennsylvania State College, State College, Pa.

PLANNING THE KITCHEN. By Maud Wilson. 32 pp. with many drawings of good kitchen arrangements, handy cabinets, etc. Sta. Circular 131, Oregon State College, Corvallis, Ore.

"Now, when Pa loses his temper we can clear the air in no time with this electric ventilator."


Singer's "Economy Budget" Electric



ONLY $5 DOWN

Liberal trade-in allowance
Easy budget terms

SINGER'S most-for-the-money sewing machine, concealed in a desk with handsome Walnut finish. The single top leaf provides ample space for materials. Has eye-saving spotlight, stitch regulator and quiet, reliable motor. The machine is of the well-known long-bobbin type, simple to thread and easy to use. And it's a *Singer*, which means you'll get a world of wear.

**Combination Knee or Foot Control**

See it at your nearest Singer Shop, or phone for a Singer Man

Singer

SEWING MACHINE COMPANY

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# ON THE AIR

Conducted by
JEROME J. HENRY

## Lives Under Lock and Key

CHARLEY McCARTHY is probably one of radio's most closely guarded individuals. Edgar Bergen does not allow anyone but himself to pick him up. So if Charlie is "on the loose"—that is, out of his suitcase—either Bergen or his secretary is standing right by him every minute. No one may touch Charlie. As soon as Charlie is through "rehearsing" he goes back into his double-locked suitcase.

At Bergen's home Charlie is confined to a special closet with a double lock on it. Some time ago Bergen got a new extra heavy suitcase so he could have Charlie insured against fire and theft. When Bergen travels Charlie is usually in the locked compartment of a coupe.

• • •

## How to Identify Real Cowboys

HERE'S a good way to tell the "Brooklyn Cowboys" from the real Texas McCoys.

A sure enough rootin' tootin' hossman from the West never rides his hoss closer than 50 yards of the camp. And he never ties him to a chuck wagon wheel.

When anyone does those things you can tell right away he's a tenderfoot, said Bob Clough in one of his radio programs. If a cowboy ever tied his hoss to a wagon wheel the boys would slap him across a hot roll and give him about ten licks with the chaps.

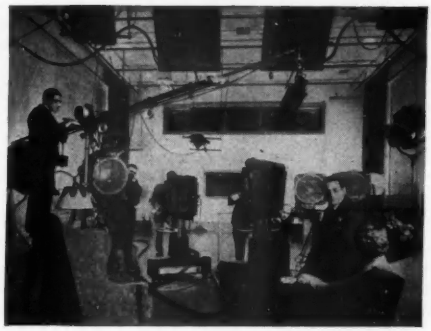
A typical cowboy breakfast, while he's on the range during round-up time, consists of sourdough biscuits, fried steaks, and black coffee. Public Enemy Number 1 on the range, since the days of the hoss thief are past, is the diamond back rattlesnake.

But of course, cowboys are always noted for being cool. There's a story that one night a cowboy woke up and found a big rattlesnake coiled right on his chest. He studied a minute, knowing that if he made any kind of disturbance, the snake would strike him. He figured out that the best thing to do was to drop off to sleep. So he did. And when he woke up the next morning the rattlesnake was gone.

• • •

## Acting Different in Television

AS several experienced hands in the theatre have found, acting for television is different. One actor put it this way: "You're quietly playing a scene. Then all of a sudden you look up and see one of those monsters staring right into your face, taking a good look and then backing off to let another peer at you. It's perfectly amazing."



A television studio scene. The actors are in the foreground at the right. You can see several men behind monstrous cameras which may be moved around and pointed at the actors from various angles. Above them is a microphone to pick up the sound of their voices. Further above huge lighting instruments make it possible to obtain clear camera images. NBC now televises regular programs in the New York area.

Thomas Hutchinson, manager of NBC's tele-


End drouth losses
and increase profits . . . with the
CALCO PORTABLE RAINMAKER

Overhead irrigation eliminates the gamble with the weather. You put on water when and where needed. Increased yields and saved crops can pay for an outfit in one year.

Write today for our new free bulletin which gives the facts on overhead irrigation.

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vision program division, can also testify. An actor recently failed to show up before dress rehearsal. Hutchinson, himself an actor, volunteered. His first scene was to be at the telephone. The show began and the cameras got around to Hutchinson. Under their cold contempt Hutchinson sat speechless and fascinated until a raucous director sneeringly reminded him that television also included sound. "It's like nothing you've ever tried," sighs Hutchinson.

• • •

### Benchley on Air

ROBERT BENCHLEY, already well established as a humorous author, book and dramatic critic, and also as a motion picture actor, can now be heard regularly on the air on Tuesday evenings.

Among the many amusing features of Benchley's program are imaginary tours to out of the way places in this country and foreign lands via the "Bounding Broomstick." Also featured on the program is Artie Shaw and his orchestra, whose success in swing music has been sensationally rapid.

• • •

### 5 Rules to Guide Radio Aspirants

FRANCES CARLON, radio actress, who has been through the ropes herself, gives five simple rules to guide the actor aspiring to a career in radio. Miss Carlon is currently starred in the Story of Mary Marlin.

1. Be sure you are an expert at reading at sight. There are no long rehearsals in radio and an immediate interpretation of a part is essential.
2. Reading aloud constantly, concentrating on voice flexibility is good preparation for a radio career. Personality is projected only through the voice in radio.
3. If you have a stage background, voice projection and "theatrical" diction has to be stepped down.
4. Be alert! You can't begin over again once you're on the air; be prepared to deal with the unexpected at all times.
5. Make up your mind that you're getting into good hard work, not romance. You must be able to work under pressure and still retain a sensitive instinct for moods and personalities. Don't, under any circumstances, give way to nerves! You'll never stand the strain if you do.

## Electric Fences

(*Here from page* 14)

of official approval by the Industrial Commission of Wisconsin of certain fence controllers which have measured up to the strict requirements of that Commission for safety and effectiveness.

You are going to use electric fences in spite of anything we tell you, so in addition to warning you of unsafe devices, we are going to permit advertisers whose equipment is approved by the Wisconsin Commission to tell you about their products. This will include both alternating current and battery operated controllers. Since some manufacturers may have one or more approved units and some which are not approved, be sure that what you buy has the official stamp of approval on it. To the best of our knowledge, such equipment is the safest that engineers and the medical profession now know to be available.


*Plenty of*

**RUNNING WATER**

*at the hose taps*

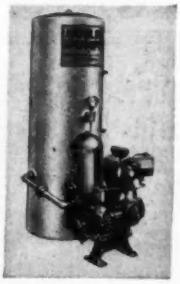
**Plenty of running water eases the burden of gardening and makes farm life healthier, happier, safer for every member of the family.**

**Install a quality built Goulds CID Water System. Its large capacity, low operating cost and long life, free from trouble, will save money for you.**

**See these self-starting, self-stopping, self-oiling Goulds CID Water Systems at the nearest Goulds dealer. Let him show you how you can always have plenty of running water at all faucets on your farm for as little as a few cents per day. Deep and shallow well types to meet all needs are available.**

*Deep Well*

*Shallow Well*



**GOULDS PUMPS, Inc., 340 Fall St., Seneca Falls, N. Y.**

GOULDS

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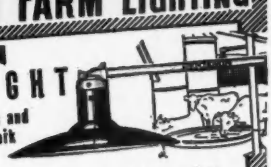
MODERN FARM LIGHTING

BENJAMIN

YARD LIGHT

Light your farm yards and you'll get the rush work done on time!



Here's an inexpensive Yard light for your farm that will make you wonder how you ever got along without it! Manufactured by Benjamin, world leader in lighting equipment, this reflector is made of lifetime porcelain enameled steel. Easy to keep clean. Comes packaged ready for installation. Nothing else to buy. Package contains reflector, socket, conduit arm, wall fitting, bolts and 2 ft. wire leads.

SEE YOUR ELECTRICAL STORE OR WRITE THE BENJAMIN ELECTRIC MFG. CO. DES PLAINES, ILL.

BENJAMIN

VARIETY-LITE

NEW LOW COST PORTABLE FLOODLIGHT FOR FARM FUN on the farm! Think of how your family and friends will enjoy a yard floodlighted for night sports, night parties, etc. Provides protection against prowlers, too! Use it for night work. Take it from one location to another. A quality product made of lifetime porcelain enameled steel. Complete with unbreakable plug and extension cord . . . efficient—low priced.

BENJAMIN LIGHTING EQUIPMENT

Distributed Exclusively Through Electrical Wholesalers



BURKS OWNERS ARE ENTHUSIASTIC BURKS BOOSTERS

The patented "One Moving Part" design, impeller with "renewable life" adjustment, larger pumping capacities, compact size, special protective feature on motor, low operating cost plus many additional features have made the BURKS the most popular of all water systems.

"ONLY ONE MOVING PART"

NO Gears, Pulleys, Liners, Pistons, Belts, Cranks, Chains, Leathers, Valves — To interrupt performance; To make costly repairs necessary; To crush inquisitive little fingers

Write for copies of voluntary letters from satisfied BURKS owners.

There is only one Burks Super Turbine

DECATUR PUMP CO., DECATUR, ILL.



EASIER, CLEANER, FASTER MILKING

MILK-MASTER

The new Perfection MILK-MASTER brings the greatest advance in machine milking ever offered dairymen. This remarkable Milker adjusts suction automatically for each teat. Action is smooth and gentle. Milk-flow is increased and your profits go up. The Milk-Master works fast and handles so easily your boys and girls can operate it. Don't postpone—see the Milk-Master at your dealer's. Request a demonstration or write us for folder.

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2108 East Hennepin Avenue Minneapolis, Minnesota


# QUESTIONS and ANSWERS

## Wiring for Yard Lights

**Question:** *In your March "Questions and Answers" you said that three additional wires were necessary to control a yard light from house and barn with three-way switches. I have designed a circuit which requires only two.*
S. T. ORE.

**Answer:** It can be done with two but the safety of the wiring is questionable and it is contrary to Article 3801, p. 121, of the National Electrical Code.

## Noiseless Alarm Clock

**Question:** *I am a very sound sleeper especially when I have lost much sleep and also when weary. What electric contrivance is there or could be developed to waken one without disturbing the rest of the household?* Mrs. M. W. C., ORE.

**Answer:** It would be possible at some expense to arrange a number of different devices which might waken you without the clatter of an alarm clock. Perhaps the two simplest contrivances would be to turn on a very strong electric light just above your head or to trip some kind of a safe weight which would fall across your bed.

## Soil Heating Cable for Poultry Water Warming

**Question:** *Please send me information on the use of soil heating cable for warming water in poultry water troughs.* W. B. G., Va.

**Answer:** Sixty feet of soil heating cable on a 115 volt circuit will use 440 watts. If you had say five water troughs to heat you could cut the sixty feet of cable into five approximately equal lengths, one for each trough, and connect them together with ordinary No. 14 rubber insulated wire, making sure that the connections were as nearly waterproof as possible and bringing them up above the surface of the water in the troughs. These five sections of cable would then act as one unit, giving about 88 watts of heat in each trough. If you wish to control the water temperature you could place a thermostat in the circuit in one of the troughs and get approximate control in all of them.

## Lead Poisoning from Soil Heating Cable

**Question:** *In view of the fact that lead is a cumulative poison I cannot help wondering if it is wise to use lead covered cable to heat water for stock or to thaw out frozen molasses.*
G. A. O., OHIO.

**Answer:** Three authorities, the Bureau of Animal Industry, U.S.D.A., the U.S. Bureau of Standards and a large industrial laboratory have written us that lead cable used for heating water might under certain circumstances dissolve sufficiently to cause lead poisoning, especially if there is carbon dioxide present. There is at least one case on

record where persons drinking water at a picnic ground where it had stood in lead pipe for a long time were poisoned. On the other hand there are plenty of instances of where people have used water out of lead pipe and given it to livestock for years with no apparent injury. Evidently there is no yes or no answer. It depends on the relative volumes of lead and water and the chemical composition of the water.

### Arc Welder from Car Generator

**Question:** *I understand that a heavy duty arc welder may be made from an old Dodge car generator. Is this true?* A. H. P., N. Y.

**Answer:** Yes, I guess so. We purchased a set of plans. It is also possible for you to make a gold wrist watch. Men do. My conclusion is that building such a welder would be an interesting job for a reasonably capable electrician, but that after you finished you would have spent about $22 for necessary parts in addition to the Dodge generator and a 3 h.p. motor to run it, and you would have a second rate welder at a first rate price.

### Nutrient Solution Culture

**Question:** *Please send me information on the electrical heating of tanks in tank farming or soilless farming.* W. H. M., Wisc.

**Answer:** The electric heating system for nutrient solution culture is the regular electric hotbed equipment consisting of 60 feet of lead covered soil heating cable and a thermostat for controlling the temperature. The heating cable is laid in the bottom of the tank.

Further information regarding the solution culture method may be obtained from the New Jersey Experiment Station, New Brunswick, N. J., or from Purdue University, Lafayette, Ind.

The menu of West Point cadets includes a quart of milk a day.

ELECTRICITY HELPED ME
EARN THIS MONEY

### Electric Brooding Does It

Electricity has worked wonders in our home, but I believe the electric brooders have helped me earn more money than any of my other electric appliances.

My old heaters were never very satisfactory. At times the chicks were too cold, sometimes too hot, and a few times they were smoked nearly black with soot.

This year we have put in automatic electric brooders. The growth of the chicks is very noticeable, since we have dependable temperatures at all times. They are unbelievably large at six weeks old and command a much better price than raised in the old way.

For extra cash on the farm give me electricity in my chicken brooders!

A. M. EDOMM,
R.R. 1, Box 58,
Contest Letter Alvin, Tex.


*Is your water supply satisfactory?*

**A DURO WATER SYSTEM**
**gives you ample, low-cost running water**

You can enjoy RUNNING WATER at less than ½ the cost of average city water rates with a DURO WATER SYSTEM. For deep or shallow wells . . . capacities to meet your needs. All automatic, quiet, self-oiling . . . last a lifetime.

Ask DURO to tell you what it will cost to put running water in your home. No obligation. Just write, and full information, plus a free book—"RUNNING WATER"—will be mailed immediately.

**The DURO Co.**
567 E. Monument Ave., Dayton, Ohio
Water Systems • Electric Pumps • Water Softeners
Water Heaters • Water Filters

**BUYERS' INFORMATION SERVICE**

As a reader of ELECTRICITY ON THE FARM you are entitled to our buyers' information service free of cost. When looking for information about equipment or material that you plan to buy, first read carefully the advertisements in this issue. They are your best guide. Then, if you do not find what you want, just write and tell us what you need and we will send your request to qualified manufacturers. Readers' Service Dept., Electricity on the Farm, 24 West 40th Street, New York.

**COOK ELECTRICALLY**
**WITH A Monarch COMBINATION RANGE**

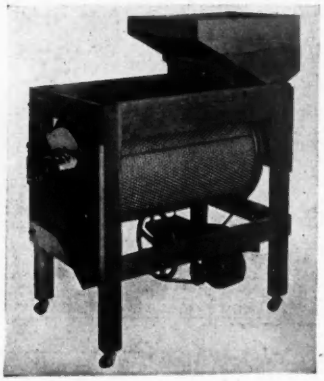
A size and model for every home. See your Monarch retail outlet or write for particulars.
MALLEABLE IRON RANGE CO.
1239 LAKE STREET BEAVER DAM, WIS.

**Reviewed by T. E. HIENTON**

*Names and addresses of manufacturers of the articles described in this column will gladly be furnished upon request to What's New Department,* ELECTRICITY ON THE FARM, *24 West 40th Street, New York, N. Y.*

## Electric Corn Grader

A new machine for grading hybrid seed corn by length of kernel is on the market. It is a compact little machine driven by a 1/6 h.p. motor and with a capacity of 7 to 12 bu. per hr. It comes equipped with motor, cord, switch and V-belt drive. Claims are that it does accurate work.



## New Insect Trap

This new trap has just been offered by one of the old manufacturers of electrical equipment. The light, which may be varied in color and intensity by substituting standard colored lamps, attracts the insects and a rugged 20 watt fan sucks them down into a collecting bag. It is claimed that the trap catches insects of all sizes, deposits them in the bag instead of on the floor and eliminates shock hazard and radio interference. Price $9.90 delivered anywhere in U. S.; extra bags, 20 cents.

## New Publications

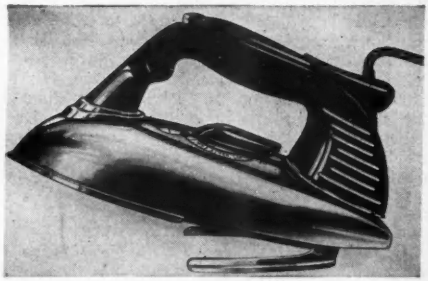
"THE WATER-CULTURE METHOD FOR GROWING PLANTS WITHOUT SOIL," Circular 347, University of California, Agricultural Experiment Station, Berkeley, California, December, 1938.

"HOME PREPARATION OF FRUITS AND VEGETABLES FOR THE FREEZER-LOCKER," Bulletin 168, University of Tennessee, Agricultural Experiment Station, Knoxville, Tennessee, January, 1939.

"ELECTRICALLY OPERATED WATER SYSTEMS FOR FARMS," Circular 139, University of Kentucky, Agricultural Extension Service, Lexington, Kentucky, 1938.

## Never-Lift Electric Iron

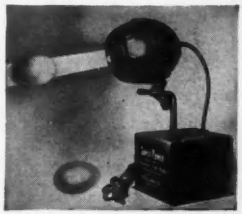
This iron has a button on the front of the handle which causes the iron to raise itself up on legs.



Press on the iron and the legs snap up out of the way. No lifting or tilting. High priced but convenient.

## Super-Power Egg Candler

With a scientifically designed reflector concentrating the rays of a high intensity 32-32 C.P. automobile bulb into a sharp single beam, it is claimed that this lamp illuminates the interior of the egg so that the smallest defects are easily seen. Lamp has two filaments. Unit complete $7.50 f.o.b. factory.



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